

Listing of Claims

Claim 1(original): An image processing apparatus comprising:

a solid image sensing device that outputs an image sensing signal where a signal including a reset period, a feedthrough period at a reference level and a photoelectric conversion signal period is repeated at predetermined periods;

a correlated double sampling circuit that processes the image sensing signal;

a video signal processing circuit that further processes and converts a video signal outputted from said correlated double sampling circuit into a predetermined digital format video signal, and outputs the video signal; and

an adjustment circuit that performs adjustment such that timing of data transition of a particular bit in a bit array indicating a horizontal retrace period of said digital format video signal does not overlap with a period for sampling the feedthrough period and the photoelectric conversion signal period in said correlated double sampling circuit.

Claim 2 (original): The image processing apparatus according to claim 1, wherein said adjustment circuit includes a signal delay circuit that delays a signal.

Claim 3 (original): The image processing apparatus according to claim 2, wherein said signal delay circuit has fixed delay time.

Claim 4 (original): The image processing apparatus according to claim 2, wherein said signal delay circuit has variable delay time.

Claim 5 (original): The image processing apparatus according to claim 1, wherein said adjustment circuit is included in said video signal processing circuit.

Claim 6 (original): The image processing apparatus according to claim 1, wherein said video signal processing circuit has a parallel output circuit that outputs a plural-bit digital signal in parallel, and wherein said signal delay circuit is provided in a front stage of said parallel output circuit.

Claim 7 (original): The image processing apparatus according to claim 1,

wherein said correlated double sampling circuit, said video signal processing circuit and said adjustment circuit are provided on the same semiconductor chip.

Claim 8 (original): The image processing apparatus according to claim 1, further comprising:

a lens that focuses an image from incident light;

said solid image sensing device that receives light from said lens; and

a control circuit that controls said lens, said solid image sensing device and said video signal processing circuit.

Claim 9 (original): An image processing apparatus comprising:

a sampling circuit that samples an analog signal from an image sensing unit;

an analog-digital converter that converts said analog signal outputted from said sampling circuit into a digital signal;

a parallel output circuit that outputs a plural bit digital signal outputted from said parallel output circuit in parallel; and

an adjustment circuit that performs adjustment such that transition timing in a case where the amount of transition of the plural bit signal outputted from said parallel output circuit is greater than a predetermined value does not overlap with timing of sampling the analog signal from said image sensing device in said sampling circuit,

wherein said sampling circuit, said analog-digital conversion circuit, said parallel output circuit and said adjustment circuit are formed on the same semiconductor chip.

Claim 10 (original):. The image processing apparatus according to claim 9, wherein the transition timing in the case where the amount of transition of the plural bit signal outputted from said parallel output circuit is greater than a predetermined value includes timing at which all the plural bits change from 1 to 0 or timing at which all the plural bits change from 0 to 1.

Claim 11 (original): The image processing apparatus according to claim 9, wherein said sampling circuit performs correlated double sampling on an image sensing

signal where a signal, including a reset period, a feedthrough period at a reference level and a photoelectric conversion signal period is repeated at predetermined periods, from said image sensing device.

Claim 12 (original): The image processing apparatus according to claim 9, further comprising a format circuit that processes and converts the signal from said analog-digital conversion circuit into a predetermined digital format video signal and outputs the video signal, wherein said parallel output circuit outputs the signal from said format circuit.

Claim 13 (original): The image processing apparatus according to claim 9, further comprising:

said image sensing device that receives a lens that focuses an image from incident light;

said image sensing device that receives light from said lens; and

a control circuit that controls said lens and said image sensing device.